

Crystal Data: Monoclinic. *Point Group:* 2/m. As tabular crystals, to 2 mm, displaying {001}, {010}, {100}, {101} and {011}; typically as intergrown aggregates. *Twinning:* Polysynthetic.

Physical Properties: *Cleavage:* Perfect on {001}. *Fracture:* n.d. *Tenacity:* Brittle. Hardness = ~2 D(meas.) = n.d. D(calc.) = 2.55 Dehydrates readily in dry air.

Optical Properties: Transparent to translucent. *Color:* Pale yellow to greenish, orange-yellow after dehydration; colorless in transmitted light. *Streak:* Yellowish white. *Luster:* Vitreous. *Optical Class:* Biaxial (+) [Probable.] $\alpha' = 1.513(2)$ $\gamma' = 1.522(2)$ $2V(\text{calc.}) = 83^\circ$

Cell Data: *Space Group:* C2/c. $a = 11.3202(3)$ $b = 7.7293(2)$ $c = 21.8145(8)$
 $\beta = 102.402(3)^\circ$ $Z = 4$

X-ray Powder Pattern: Mas d'Alary uranium deposit, Lodève, Hérault, France.
10.625 (100), 5.321 (66), 6.277 (42 calculated), 3.549 (5), 2.663 (4), 2.131 (2), 5.167 (1)

Chemistry:	(1)	(2)	(3)
FeO	10.88	9.28	10.03
CuO	0.16	0.14	
MgO	0.43	0.36	
Al ₂ O ₃	0.31	0.26	
SiO ₂	0.21	0.18	
SO ₃	25.68	21.91	22.34
UO ₃	47.10	40.19	39.98
H ₂ O	[32.65]	[27.67]	27.65
Total	117.40	100.00	100.00

(1) Mas d'Alary uranium deposit, Lodève, Hérault, France; average electron microprobe analysis, H₂O from structure analysis, complex anions confirmed by IR spectroscopy. (2) Analysis 1 normalized, corresponding to $(\text{Fe}_{0.93}\text{Mg}_{0.07}\text{Al}_{0.04}\text{Cu}_{0.01})_{\Sigma=1.05}(\text{U}_{1.01}\text{O}_2)(\text{S}_{1.96}\text{Si}_{0.02})_{\Sigma=1.98}\text{O}_8(\text{H}_2\text{O})_{11}$. (3) $\text{Fe}(\text{UO}_2)(\text{SO}_4)_2(\text{H}_2\text{O})_{11}$.

Occurrence: A secondary mineral in the oxidized zone of a uranium deposit.

Association: Pyrite, uraninite, calcite, quartz, unspecified clay minerals, gypsum, deliensite.

Distribution: From the Mas d'Alary uranium deposit, Lodève, Hérault, France.

Name: Honors Jean-Claude Leydet (b.1961), an amateur mineralogist and mineral collector from Brest, France, who discovered the new mineral.

Type Material: At the Musée Cantonal de Géologie, Lausanne, Switzerland (MGL 92661).

References: (1) Plášil, J., A.V. Kasatkin, R. Škoda, M. Novák, A. Kallistová, M. Dušek, R. Skála, K. Fejfarová, J. Čejka, N. Meisser, H. Goethals, V. Machovič, and L. Lapčák (2013) Leydetite, $\text{Fe}(\text{UO}_2)(\text{SO}_4)_2(\text{H}_2\text{O})_{11}$, a new uranyl sulfate mineral from Mas d'Alary, Lodève, France. *Mineral. Mag.*, 77(4), 429-441. (2) (2015) *Amer. Mineral.*, 100, 2355-2356 (abs. ref. 1).